

## **IN THE CLAIMS:**

Please amend the claims as follows:

**Claim 1. (Currently Amended)** Porous membranes of (per)fluorinated amorphous polymers having a pore size in the range 5 - 500 nm an average pore size distribution, determined by an atomic force electronic microscope, wherein in the pore size distribution of said membranes 80% - 90% of the pores have a size ranging from minus 5 nm to plus 5 nm of the value of the pore distribution maximum peak.

**Claim 2. (Cancelled)**

**Claim 3. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 1, the (per)fluorinated polymers selected from the group consisting of A), B) and C):

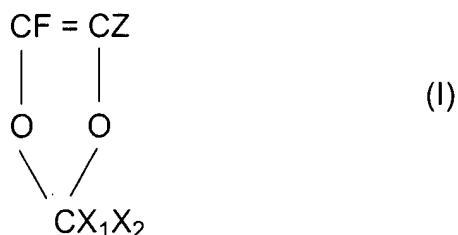
A) polymers made of monomers that are selected from the group consisting of formulas (I), (II), (III) and (V):



wherein:  $\text{Y}_1$  and  $\text{Y}_2$  are selected from F, Cl,  $\text{CF}_3$ ,  $\text{OR}_f$

wherein  $\text{R}_f$  is a  $\text{C}_1$  -  $\text{C}_5$  perfluoroalkyl radical;

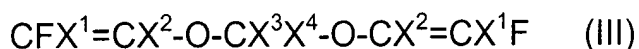
dioxoles having structure (I):



wherein: Z is selected from F, R<sub>f</sub>, OR<sub>f</sub>; R<sub>f</sub> is a perfluoroalkyl

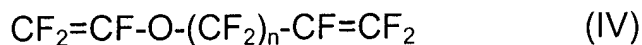
radical C<sub>1</sub> - C<sub>5</sub>; X<sub>1</sub> and X<sub>2</sub> are selected from F and CF<sub>3</sub>;

bisvinylmethanes having structure (III):



wherein X<sup>1</sup> and X<sup>2</sup>, equal to or different from each other, are F, Cl; X<sup>3</sup> and X<sup>4</sup>, equal to or different from each other, are F or CF<sub>3</sub>;

dienes having structure (IV);



wherein n = 1 - 5;

- B) homopolymers of monomers having structure (I) or (III) or (IV);
- C) copolymers of monomers having structure (I) or (III) or (IV).

**Claim 4. (Original)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, wherein the copolymer is derived from the structures (I) and (II) wherein Z=OR<sub>f</sub> with R<sub>f</sub>=CF<sub>3</sub>, X<sub>1</sub>,X<sub>2</sub>,Y<sub>1</sub>,Y<sub>2</sub>=F.

**Claim 5. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, wherein the dioxole percentage having structure (I) is in the range 40%-90% by moles.

**Claim 6. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, wherein as dioxole having structure (I) 2,2,4-trifluoro-5-trifluoromethoxy-1,3-dioxole (TTD) is used.

**Claim 7. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, wherein the monomers having structure (II) are selected from tetrafluoroethylene, perfluoroalkylvinylethers (C<sub>1</sub>-C<sub>5</sub>), hexafluoropropene, chlorotrifluoroethylene.

**Claim 8. (Currently Amended)** Process for obtaining the porous membranes of (per)fluorinated amorphous polymers according to claim 1, comprising:

- the preparation at room temperature, in the range 15°C-25°C, of a solution of the amorphous polymer in a fluorinated solvent; the solution viscosity at 23°C being in the range 5-5.000 cP (centipoise), ~~preferably 10-300 cP;~~
- the solution is spread on an inert support, ~~preferably by a stratifying knife having a defined thickness;~~

- it is let evaporate at a constant temperature ~~, preferably equal to that of the spreading,~~ inferior of 10°C-45°C with respect to the solvent boiling temperature, ~~preferably inferior of 15°C-35°C,~~ for such a time as to allow a slow evaporation of the solvent and the consequent formation inside the film of pores having the above mentioned sizes; ~~said time being in the range from about 1 to 10 days,~~ preferably 3-6 days .

**Claim 9. (Currently Amended)** A process according to claim 8, wherein the fluorinated solvent has ~~preferably~~ a boiling temperature in the range 50°C-300°C ~~, preferably 50°C-150°C .~~

**Claim 10. (Currently Amended)** A process according to claim 8, wherein the polymer concentration in the solution is in the range 1-20% by weight ~~, preferably 1-10% by weight .~~

**Claim 11. (Previously presented)** A process according to claim 8, wherein the fluorinated solvent is selected from (per)fluoropolyethers (Galden<sup>®</sup>, Fomblin<sup>®</sup>, Krytox<sup>®</sup>, Demnum<sup>®</sup>), hydrofluoropolyethers (H-Galden<sup>®</sup>), fluorinated and perfluorinated ethers Fluorinert<sup>®</sup> (series FC and HFE) optionally containing one or more hydrogen atoms in the end groups, perfluoroalkanes.

**Claim 12. (Currently Amended)** A process according to claim 8, wherein the fluorinated solvent is selected from (per)fluoropolyethers containing the following units:

- a)  $-\text{O}(\text{C}_3\text{F}_6\text{O})_{m'}(\text{CFXO})_{n'}-$  wherein the units  $(\text{C}_3\text{F}_6\text{O})$  and  $(\text{CFXO})$  are perfluorooxyalkylene units statistically distributed along the chain;  $m'$  and  $n'$  are integers ~~such as~~ to give products having boiling point generally in the range  $60^\circ\text{C}$ - $300^\circ\text{C}$ , ~~preferably  $60^\circ\text{C}$ - $150^\circ\text{C}$~~ , and  $m'/n'$  is in the range 5-40, when  $n'$  is different from 0 ; X is equal to F or  $\text{CF}_3$  ;  $n'$  can also be 0;
- b)  $-\text{O}(\text{C}_2\text{F}_4\text{O})_{p'}(\text{CFXO})_{q'}-(\text{C}_3\text{F}_6\text{O})_{t'}$ , wherein  $p'$ ,  $q'$  and  $t'$  are integers ~~such as~~ to give products having the boiling point mentioned in a),  $p'/q'$  ranges from 5 to 0.3 , ~~preferably from 2.7 to 0.5~~ ;  $t'$  can be 0 and  $q'/(q'+p'+t')$  lower than or equal to 1/10 and the  $t'/p'$  ratio is from 0.2 to 6;
- c)  $-(\text{CR}_1\text{R}_2\text{CF}_2\text{CF}_2\text{O})_n-$  wherein  $\text{R}_1$ ,  $\text{R}_2$ , equal to or different from each other are H, F, perfluoroalkyl  $\text{C}_1$ - $\text{C}_3$ ;  $n$  is an integer ~~such as~~ to give products having the boiling point mentioned in a);

the end groups are selected from  $-\text{CF}_3$ ,  $-\text{C}_2\text{F}_5$ ,  $-\text{C}_3\text{F}_7$ , optionally containing one or two chlorine atoms,  $-\text{CF}_2\text{H}$ ,  $-\text{CFHCF}_3$ .

**Claim 13. (Original)** A process according to claim 12, wherein the fluorinated solvent is dihydrofluoropolyether of type b) wherein  $t'$  is equal to 0,  $\text{X}=\text{F}$  or  $\text{CF}_3$  and both end groups are  $-\text{CF}_2\text{H}$ ; the boiling point being in the range  $50^\circ\text{C}$ - $80^\circ\text{C}$ .

**Claim 14. (Previously presented)** A process according to claim 8, wherein the polymeric solution spreading and the solvent evaporation are carried out at a temperature between 10°C and 40°C and using a fluorinated solvent having a boiling temperature between 55°C and 60°C.

**Claim 15. (Currently Amended)** A process according to claim 8, wherein the support for the spreading of the polymeric film is selected from: glass/quartz, polymethylmethacrylate, polycarbonate, polyurethane, polystyrene, ceramic and metal supports, thermoplastic fluoropolymers, ~~preferably glass and polyurethane.~~

**Claim 16. (Previously Presented)** A ultrafiltration or nanofiltration separation process wherein a solution containing a solute is contacted with the porous membrane of claim 1.

**Claim 17. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 1 having a porosity in the range 20-100 nm.

**Claim 18. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, wherein Z is OR<sub>f</sub>.

**Claim 19. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, wherein  $X^1$  and  $X^2$ , equal to or different from each other, are F.

**Claim 20. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 3, the dienes having structure (IV) wherein  $n = 1 - 2$ .

**Claim 21. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 5, wherein the dioxole percentage having structure (I) is in the range 50% - 85% by moles.

**Claim 22. (Previously Presented)** Porous membranes of (per)fluorinated amorphous polymers according to claim 7, wherein the monomers having structure (II) are tetrafluoroethylene.

**Claim 23. (Previously Presented)** A method for purifying a fluid containing gas impurities by contacting said fluid with the membranes of claim 1.